

# Agriculture and Ritual in the Middle Jōmon Period

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## HYPOTHESES AND EVIDENCE FOR MIDDLE JŌMON AGRICULTURE

ARCHAEOLOGISTS have made several attempts in the past fifteen years to demonstrate that some primitive form of agriculture supported the large communities of Japan's central mountainous region during the Middle Jōmon period (Watanabe 1965). The largest of these communities lies in a geographical zone that spans the island of Honshū; the zone is terminated in the east by Tokyo and in the west by the Noto peninsula (see Fig. 1). Until recently no material finds supported this agricultural hypothesis, and those researchers who were skeptical of indirect evidence still grant that only a minor form of cultivation existed in the Middle Jōmon period and that it was of no long-range consequence. The tendency now is for writers who survey Japanese prehistory to admit that there probably was some cultivation in the Jōmon period, but to qualify the admission by adding that there could hardly have been very much (Saito 1961:144).

Since the Iwajuku 岩宿 find in 1949, numerous pre-pottery sites have been discovered and many scholars have accepted the idea of a Palaeolithic stage in Japan; among them, a general realization has "evolved" of the economic conditions that slowly changed and ultimately clearly distinguished the Jōmon period from its predecessor. The discovery of the rich resources of the sea accounted for a somewhat sedentary life for people who lived along the east coast of Japan; the coast was subject to warm currents and was marked by numerous protected inlets; gradually there was an increase in population. The relative comfort of life on the east coast seems not to have stimulated unusual inventiveness and initiative in the population, although ease and comfort may have been conducive to the normal cultural development and undoubtedly allowed for the culture's susceptibility to influences from inland areas. Similar developmental justification does not exist for the inland groups who made striking advances at the start of Middle Jōmon; nor would the simple gathering of more food have encouraged accelerated developments. A climate change that produced environmental improvements may have aided, but the evidence today indicates that there was far more than simply an ideal ecological situation that was previously unexploited by the people.

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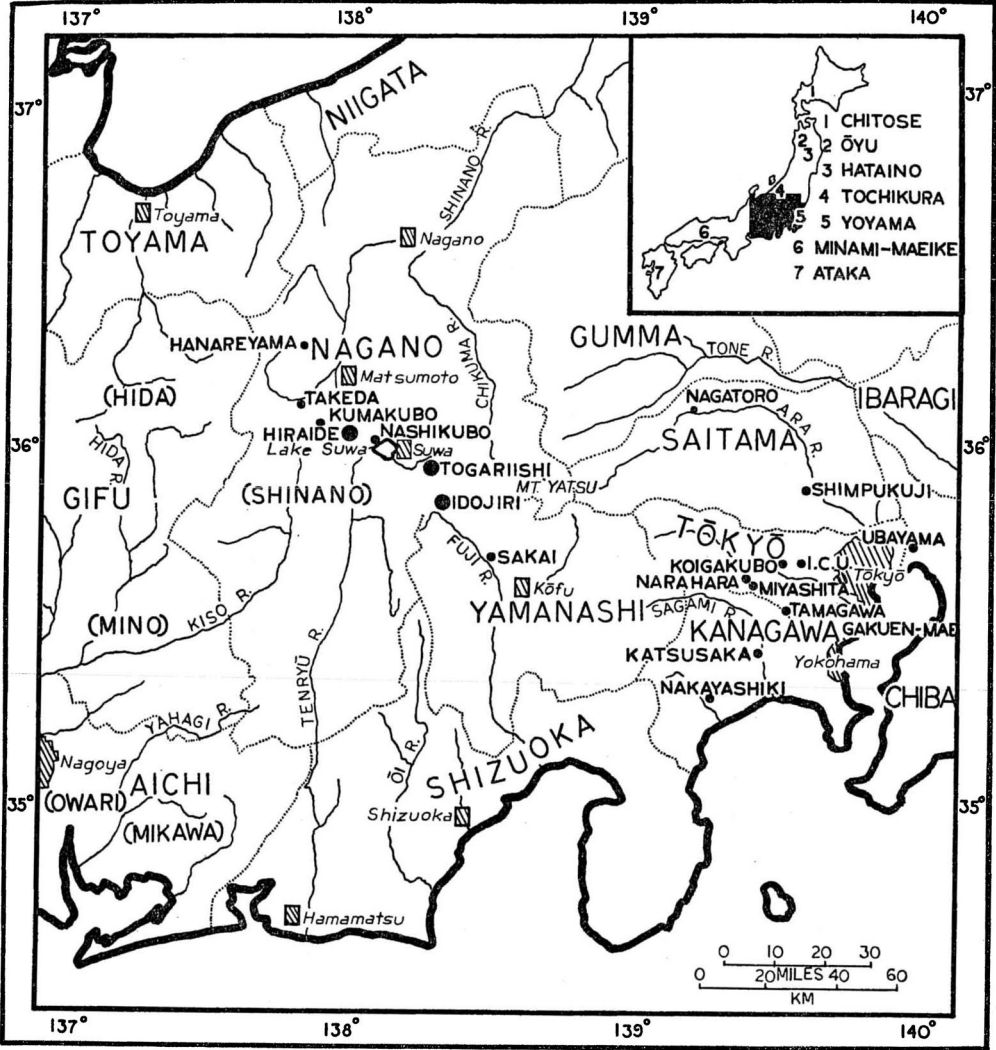


Fig. 1 Map of central Japan, showing sites referred to in text.

Beginning with Earliest Jōmon times, small bands of people seem to have found seafoods generally adequate for their livelihood. The rather small size of the sites and the limited distribution of pottery types speaks for a circumscribed mobility of a population that used only a small fraction of its available resources. Conditions changed in the Middle Jōmon period: substantially expanded sites in the central mountains mark a much augmented population, and by the time of the Late Jōmon period, the definite increases in the sizes of the coastal shell mounds are evidence of rather large communities. Possibly, groups were contesting for favorable locations, but at least it can be said that contacts between them were more frequent and pottery styles were correspondingly more diffused: the zoned cord-marked pottery of Late Jōmon extends all the way from Hokkaidō to Kyūshū, a phenomenon that could have resulted only from the considerable and rather prolonged proximity between groups of people.

Proportionally, more animal bones have been found in northern sites than in those of the south; especially the bones of the wild boar indicate there was more than an average supplementation of the shellfish diet through hunting. The large shell mounds may at first suggest almost inexhaustible supplies of shellfish complemented by fish, animal meat, fruits, and nuts; but there is also evidence to lead one to believe that since the largest of the shell mounds are situated with fairly level "hinterlands," minor forms of cultivation in the vicinity added a further stabilizing element to the communities and encouraged population growth (Tsuboi 1962: 126).

Sakazume has listed the edibles whose remains have been found in Jōmon sites (Sakazume 1961: 235-239). They are as follows: (nuts) walnut (*kurumi*), chestnut (*kuri*), horse chestnut (*tochi*), water-caltrop (*hishi*), ginko (*ginman*), and various kinds of acorns (*konara*, *mizunara*, *kunugi*, *arakashi*, *ichiigashi*, and *shii*); (fruits) persimmon (*kaki*), and peach (*momo*); (seeds) red (Indian) beans (*azuki*), and buckwheat (*soba*); (grains) rice (*ine*); (leaves, stems or roots) black arrowhead (*kurokumai*), and various cucurbitaceous plants (*uri*); (supplements) Japanese pepper (*sanshō*), tea (*cha*), and burdock (*yamagobō*). Oil may have been made from seeds: hemp (*ōasa*), sesame (*goma*), camellia (*tsubaki*), and yew (*kaya*, *inugaya*).

Several of these are now considered to be dubious. This is the case for the sesame, buckwheat and red (Indian) bean (incorrectly called hairy podded kidney bean in Groot 1951: 69 and in Kidder 1959a: 54) from the Shimpukuji shell mound, and the hemp from the Yoyama shell mound. The rice is from the Daigi Gakkoi and Masugata Gakkoi sites in north Japan, associated with remains which some scholars now regard as Yayoi in time. The problem of rice in certain Latest Jōmon sites in Kyushu cannot concern us here.

Less than a decade ago, when Sakazume took up the question of agriculture in the Jōmon period, it was an unpopular subject explored only by the distraught who did not seem to realize that agriculture meant rice cultivation (Sakazume 1957). Most archaeologists retained the traditional concept that the Jōmon period was a time of man's hunting and gathering and they resisted the impact of indirect evidence that has accumulated since the turn of the century; those who did believe that mixed economies must have existed in the Jōmon period were chiefly local diggers of Middle Jōmon sites in the Chūbu whose influence was deflected off the normal patterns of thought in the intellectual centers of the country.

When Ōyama excavated the large Katsusaka 勝坂 site in Kanagawa Prefecture in 1927, he was astonished at the number of stone implements that accompanied the elaborate pottery (Ōyama 1927: 9, 18, 32). He compared the implements with comparable tools from rather similar sites and considered them to be too dull to have been used as axes; he determined that they would have been more serviceable for digging. The decision led him to suggest the pos-

sibility of some kind of simple agriculture. Others were quick to point out that Jōmon sites are characterized by a number of pits for houses and that the tools in question could have been used as easily to excavate pits as to work the soil.

Kobayashi had been less defensive far earlier than Sakazume. He spoke in favor of the existence of taro or something similar to it and stated that the problem was not so much whether there was any kind of agriculture in the Jōmon period, but what form it took (Kobayashi 1965: 269, Note 8).

Sakazume was largely ignored because he cast his net too wide. Being too inclusive, he was too imprecise. His approach gave consideration to four points that are still crucial to the problem: (1) which plants may have been manipulated, (2) the residential nature of the community and the availability of nearby land for cultivation, (3) evidence that a high percentage, if not a preponderance, of tools were designed for soil cultivation, and (4) inferences that the society had organized itself to meet the demands of a stable economy (Sakazume 1957).

When Sakazume led off with chestnuts and acorns, his critics opened fire: their definition of agriculture did not include nut cultivation, and it could never be proved how much manipulation of the oak and chestnut trees there might have been to have grown them in the community neighborhood. The nuts may have been simply harvested wherever found. Sakazume used the example of acorns from Inland Sea sites and Shimane Prefecture on the west side as evidence of climatic change. Shimane Prefecture is normally a cold area, and the implication is that a warmer climate had existed in Early Jōmon times, but that the temperature had lowered somewhat by the time of the Middle Jōmon period. Therefore, chestnuts probably were cultivated during the centuries of the cooler Middle Jōmon period and acted as a supplement to other foods. Chestnuts have been recovered from swampy sites, and horse chestnuts and walnuts have been found together in Kantō sites.

The location of sites near springs was "decisive" evidence to Sakazume in determining the community's agricultural character: there may have been forays for game and fish, but the hunters retained a home base because of its ideal location; shell mounds could hardly represent merely camping sites; house pits and thick layers of refuse indicated some length of occupation of the spot, and human burials in shell layers supported the home-base idea; mountain-top sites (such as those on top of Tanna mountain in almost inaccessible territory; see Kidder 1957: 51) contained traces left by hunters who passed through. Therefore, according to Sakazume, sites were chosen by Jōmon man for their proximity to fresh water and for their "striking distance" to nut-bearing trees.

Sakazume presumes that Jōmon man's chief tool would have been a digging stick. Second in importance would have been a grass-cutting tool, probably of bamboo that was used for clearing the ground. Neither, however, would have been preserved in the sites. Ashes may have been used as fertilizer; large jars were made for storage purposes to protect foods against rodents and vermin; and, possibly, the stone circles, such as those at Ōyu in Akita Prefecture (Bunkazai Hogo Linkai: 1953) acted as kinds of calendars that "told" when spring sowings should take place.

Women's occupations may have included certain ceremonies. The men did the hunting, the building, and the fighting, if fighting was necessary. The figurines recovered are all female and are known in many parts of the world as typical of early agricultural societies. They show that economic stability owed much to the scope of work performed by the women and that the social system was essentially matriarchal.

Beyond these theories, Sakazume assumes that families had some sort of vegetable gardens.



His broad theme attempts to separate the Palaeolithic Age from the Neolithic Age and to draw attention to the contrasting economic structures of these stages. He does not discount the hunting and gathering side of Jōmon life, but he does recognize the complexity of the culture as an attainment of mixed economies.

A sampling of sites in which remains of fruits and nuts have been found would include: Idojiri 井戸尻, Nagano Prefecture, Tōnai 藤内 site, House Pit 9—chestnuts (Fujimori ed. 1965 Fig. 204); Tochikura 栃倉, Niigata Prefecture, House 10—chestnuts in an enlarged fireplace (Ishiwata and Fujita 1961: Plate 11); Minamigata Maeike 南方前池, Okayama Prefecture—peach seeds, various fruits, horse chestnuts, chestnuts, and acorns in storage pits (Shiomi and Kondo 1956); and Korekawa 是川, Aomori Prefecture—peach seeds, walnuts, and chestnuts (Kida and Sugiyama 1932: Plates 5, 6).

Two years after Sakazume had released his trial balloon, Esaka still reflected the relative unpopularity of the idea of Jōmon agriculture in general archaeological circles by calling his article an exploratory one (Esaka 1959). Esaka narrowed the time and area in question down to the early Middle Jōmon period and to the central zone of Honshu—including the extreme western edge of the Kantō and the corresponding region on the west side of the island. Based upon the premise that there must have been good reasons for the sudden acceleration of developments at that time, he accepted as the most logical reason the adoption of a limited form of plant cultivation.

Judging from the numerous pits for dwellings, one may assume that the settlements expanded abruptly in size; they have the appearance of permanence, and testimony to fairly continuous occupation may be seen in the successive pottery types found within any given settlement. Similarities in pottery types that are dispersed from the hilly uplands to the lower and more spacious terraces where springs supply ample running water should show that the population followed the major valleys in what was probably a search for more satisfactory hunting and fishing grounds. More than likely, foraging parties collected seedlings of the horse chestnut tree (*Aesculus chinensis*) in the mountains or highlands and brought them down to lower terraced land for planting. Yams (*Dioscorea japonica*) were cultivated, and would include the *mizu-imo* (water yam), yama-imo (yama, contraction for Yamato, i.e. Japanese, but sometimes written as mountain) in addition to lily bulbs (*yuri*). Starch was leached out of these roots in the running water of the springs along the terrace edge. Proper selection of the site was therefore doubly important.

Many sites of this Middle Jōmon period yield sandstone and shale tools, a fact that had caught Ōyama's attention when he dug at Katsusaka forty years ago. Esaka also feels that their coarseness and the poor quality of the stone must have made them suitable for little other than the cultivation of tuberous roots, for which finer tools may not have been necessary.

An investigation into the character of many sites in the Mino mountain district (south Gifu Prefecture) was carried out by Sumida (Sumida 1964: 111-175) whose attention was drawn to the major cultural transformation in the area from Earliest-Early Jōmon to Middle Jōmon and the succeeding rapid adoption of rice cultivation when neighboring areas seemed to lag behind. He reasoned that the quick acceptance of this Yayoi trait was owing to the existing traditional practice of cultivation (Sumida 1956: 97). Comparative analysis shows that the early Yayoi trend towards rice raising in the Owari district is contrasted to west Mikawa (also in present Aichi Prefecture) and to the Hekikai plateau where the old Jōmon characteristics remained dominant. This is an areal conformation already suggested as composed of

agricultural and nonagricultural regions since the Middle Jōmon period, judged by the presence or absence of quantities of stone implements, standing stones, mortars, and phallic stones (Sumida 1956: 91). Sumida notes the relatively short distances between villages and presumes that the space in between was used for cultivation and that each village was located near a spring. He regards the standing stones—apparently natural stones selected for their shape—as some form of communal symbols of a village (Sumida 1956: 97). Tsuboi points out that Sumida's great stress on mortars as evidence of agriculture can be countered by the existence of concave stones from the middle stage of Earliest Jōmon, coupled with stones that served as grinders, an argument that could be used to imply that some type of agriculture had been practised from a much earlier date (Tsuboi 1962: 123).

Tsuboi quotes Kokubu as believing that Late Jōmon vessels with perforations were used as steamers (also see Nakamura and Teramura 1956), and Kobubu felt that taro was cooked in them (Tsuboi 1962: 124). Kokubu was further impressed by the similarity between the oval-sectioned, ground axes that appeared in the late Early Jōmon period and the hand digging-tool of the Oceanic area. Egami refers to several modern survivals of religious ceremonies associated with taro cultivation, a kind of food that is more obviously ritualized than most (Ishida et al. 1958: 292, Note 79).

Kimura quotes Watanabe as saying that the grain that most likely was raised in the Jōmon period was a kind of millet, a point that will ultimately be determined scientifically (Kimura 1963: 57).

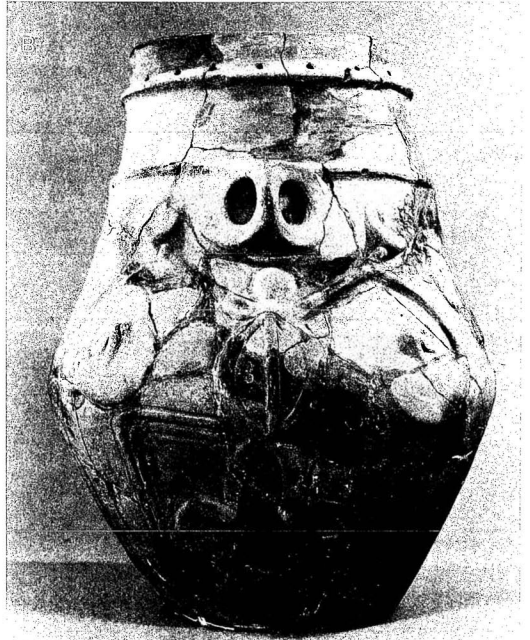
### *The Idojiri "Bread"*

The mounting pressures behind the indirect evidence outlined above were sharpening the archaeologists' sensitivity to the most perishable of materials in sites. It was no accident that the first tangible evidence was recognized by Fujimori at Idojiri, a place that is actually a collection of sites at Fujimi-chō in Nagano Prefecture. Carbonized "bread" (*pan*) was found in March 1960 (Plate 1a). Identified only as being made of starch, it was uncovered beside a fireplace in Pit Dwelling 5 of the Sori site. Fujimori also pointed out that at the Tōnai site, House 9, a piece of carbonized bread was discovered in the company of many chestnuts (Fujimori 1965: 41-42). Vegetable foods, he concludes, seem to have been one of the important staples at Idojiri (Fujimori, ed. 1965: 139-142; Plate 108, Figs. 205, 206; 1965: 31-32).

After about two years it was possible to restore the fragments of carbonized starch from the Sori house, Pit Dwelling 5, as four cakes and one small piece described as "mochi" shaped (like a rice ball). The cakes measure about 16.5 × 10 cm (Plate 1a). The chestnuts of the Tōnai house had evidently been placed on a shelf made of branches over the fireplace. The collapse of the north wall of the house knocked the shelf down, taking the nuts with it.

Fujimori also unearthed a set of vessels: a deep, well-decorated bowl, several deep but coarse bowls, and a pot with a lid. Fujimori reasoned that the vessels' shapes were differentiated according to use, which would thus supply proof enough for his supposition that vegetables were important staples. In other words, they were made for storage, boiling foods, and for offerings (Fujimori, ed. 1965: 94).

Finds of two pairs of vessels and what appeared to be a third (but was so fragmentary that it was unrecoverable in recognizable form) at Location 1D of the International Christian University (I.C.U.) site were all within 170 cm of each other, roughly on an east-west line, 70 cm below the surface, and appeared to show a ritual arrangement, although of uncertain



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Plate 1a Carbonized starch "bread," House 5, Sori, Idojiri, Fujimi-chō, Nagano Prefecture. Length, 16.5 cm. (Fujimori 1965a, Plate 108, lower.)

b Pot bearing human figure from Idojiri, Fujimi-chō, Nagano Prefecture. Height, 51.2 cm.

c Snake head on rim of vessel from Kami-asao, Katahira, Kawasaki City. Widest dimension of coil, 6 cm.

significance. These pairs consisted of a large jar and bowl (Fig. 2) and a proportionally smaller jar and bowl. The larger set is clearly Katsusaka in type, while the smaller set has mixed features including cord-marking that is more characteristic of the Ubayama type. However, the conditions of discovery left little doubt that the deposit of all the vessels took place at the same time.

More recently, an analysis by Watanabe of the Idojiri bread showed a high content of calcium in contrast to a low content of phosphoric acid. As cultivated plant products should contain this ratio in reverse, Fujimori finds it most difficult to accept the analysis at face value and offers an alternate explanation. The phosphoric acid may have been dissipated and replaced by calcium during the centuries that the bread was buried (Fujimori et al. 1965: 36). Kiriwara lists millet and barnyard millet as the least likely to have been used in the making of this bread, taro as a good possibility, but rice, oats, and horse chestnuts as the most likely material (Fujimori et al. 1965: 36). He also points out that a man can easily collect 36 liters (about 38 qts.) of acorns a day, and a family of five can manage for a winter on a houseful of acorns. Oaks give their maximum yield in a three-to-five-year span after reaching maturity, and boiling and drying techniques known today make it possible to preserve acorns for at least a century with a process that provides immunity to the predations of rodents and vermin.

#### *Physical Features of the Chūbu Region*

Geographically, the most northerly point of the region with which we are dealing is Lake Suwa at an altitude of 759 m, close to the thirty-sixth parallel. The lake has a circumference of approximately 19 km and is fed by several short streams and underground hot springs whose reputed alleviation of maladies has attracted ailing people from far and wide. Its abundant fish are chiefly carp, gibel, and eel.

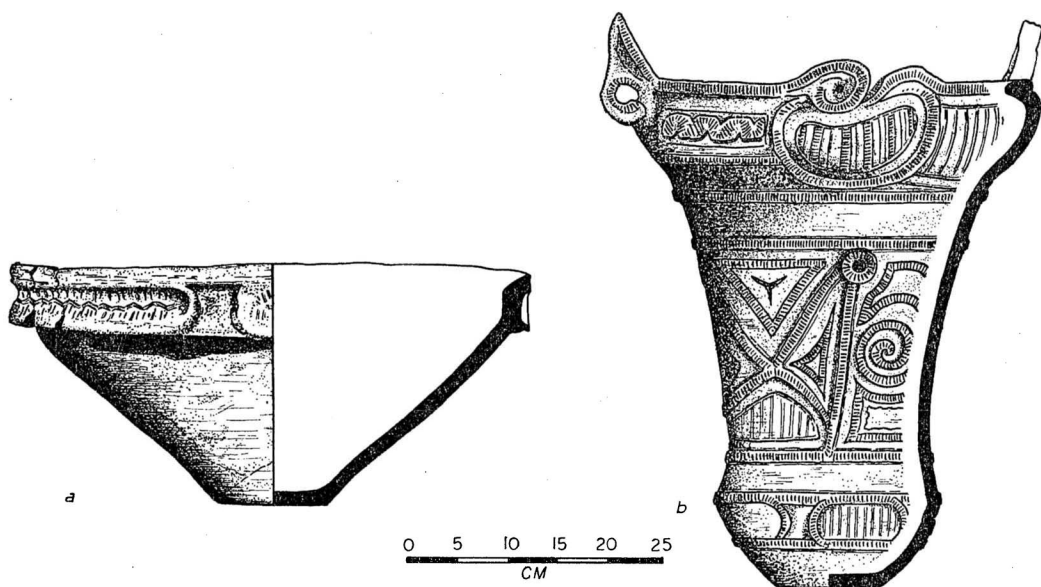


Fig. 2 Bowl (a) and jar (b) from Location 1D, International Christian University, Mitaka City, Tokyo. Katsusaka type.

Rice-raising occupies the time of much of the farming population, and some localities require terrace cultivation, but in this region and farther south where irrigation is more difficult, sericulture has taken hold during the last century, although in Gifu Prefecture, for instance, the practice is said to be almost a thousand years old.

The watershed, located at Utō Pass, is only about 10 m higher than Lake Suwa, and from there, the flow is either towards the Japan Sea or the Pacific Ocean. Matsumoto City, some 240 km from Tokyo, is situated at the foot of the Japan Alps and is a useful marker for separating the eastern and western cultural zones of this geographical belt.

One of Japan's longest rivers, the 215 km Tenryū, leaves Lake Suwa from its northwest corner and runs almost directly south through Nagano and Shizuoka prefectures to empty into the ocean near the modern city of Hamamatsu. The Fuji River, or its many branches and tributaries, flows through the Kōfu basin, by the modern city of Nirasaki, which is flanked on the east by the Shio River, and through the prefecture of Yamanashi and into Suruga Bay. East of Kōfu spreads the lowland, descending into the Kantō Plain. The Kiso River takes a more southwesterly course, running through Nagano and Gifu and coming out west of the city of Nagoya. Its role and those of its tributaries as an artery and lines of communication from the mountains to the plains was more important in the later Jōmon period than in the Middle Jōmon. South Nagano, the region under question, falls chiefly within a forested zone that includes beech, oak, cedar, and birch. From 1931 to 1960 the temperature at Matsumoto averaged  $-1.0^{\circ}\text{C}$  in February and  $24.0^{\circ}\text{C}$  in August, and the annual precipitation was 1063 mm—49 mm in February and 116 mm in August (Tokyo Tenmondai 1965: Kishō, Charts 9, 17). The sites of Hiraide 平出, Togariishi 尖石, and Idojiri 井戸尻 have altitudes of from 800 to 1300 m: Hiraide is 1000 m above sea level; Togariishi ranges from 800 to 1300 m; and Idojiri has an altitude of from 900 to 1200 m.

Some of the large sites on the Matsumoto plateau lie about 4 km apart (i.e. Hiraide, Kumakubo 能久保, Takeda 竹田), and the terrain gives the impression that each community had an operating radius of around 2 km. Higuchi quotes the *Shinano Shiryo* 信濃資料 to the effect that the sites are in close proximity to each other at the foot of Mount Yatsu, at the intervals mentioned above on the Matsumoto plateau and in the Ina valley, and that they are at great distances apart in the Chikuma River valley (Fujimori et al. 1965: 29).

#### USE AND RITUAL IN MIDDLE JŌMON POTTERY

Large size and elaboration of decoration is typical of the Middle Jōmon period. Additionally, the following features are worth considering: (1) the appearance of new shapes that were intended to serve specific functions, some of which were apparently ritual, and (2) a new approach towards decoration that includes (a) a minimum use of cord-marking, (b) appliqué coupled with incision work, (c) the inclusion of zoomorphic or anthropomorphic motifs, or both, and (d) a limited use of surface painting. In all cases, these features are alien to Jōmon pottery, although to different degrees. Parts or all of certain of these features become minor contributions to later pottery, but the Middle Jōmon culture of the central mountains can hardly be said to have established or perpetuated any mainstreams of development. Most Middle Jōmon features had lost their distinctiveness by the Late Jōmon period—to the point of making one wonder how an obviously vigorous culture could have been submerged so rapidly.

An increase in the quantity of pottery was not accompanied by improvements in techniques,

and the expanded Late Jōmon population demonstrated that a large population did not necessarily require large-sized pots. The size of the pots was directly connected with the traditions of the region and the uses of the pots in subsequent stages of development. The extensive communities that deposited the Late Jōmon shell mounds made consistently smaller vessels than those of their Middle Jōmon predecessors; they discarded some shapes and introduced others. Late Jōmon man, for instance, added the spouted, teapot-shaped vessels; square, legged, and ring-shaped vessels; replicas of shells, and vases and bottles, but had no need for the Middle Jōmon large bowl and pottery stand, and little use for the incense burner. Late Jōmon man's technical changes included proportionally thinner walls and higher firing, along with slightly purer clays.

It has not been pointed out often that early Middle Jōmon man spent a great deal of time making and decorating such elaborate pottery, and it seems unlikely that his intention would have been to pack up and leave soon after having done so. Katsusaka is the least portable of all the Jōmon styles. It had inspired the term *Atsude-shiki* 厚手式 ("thick style") before the modern typological system was devised, and the style was the logical result of an attempt to make larger vessels without noticeably improving the techniques.

Large pots of the Middle Jōmon period (most major sites have yielded them) served well as the central units of fireplaces. Among the new shapes of the Middle Jōmon stage are large bowls, so-called incense burners, stemmed vessels, wide-sectioned jars with neck lip and neck perforations, and pottery stands. What seems to be important here is that the pottery makers were quite unconcerned with the constant improvement of the boiling pot that Esaka has pointed out had preoccupied the coastal people almost as far back as the invention of pottery (Yamanouchi 1964: 162). The refinements are most conspicuous in the Kantō; flat bases were attached to vessels. Throughout the duration of the Sekiyama 関山, Kurohama 黒浜, and Moroiso 諸磯 types of Early Jōmon, modifications were constantly being made to expose broader surfaces to the heat of the fire. The range of shapes is consequently almost entirely limited to variations of the boiling pot. Late Jōmon finds in the coastal zones still show that the problem was not entirely forgotten.

One group of vessels with unusual features is best represented at Idojiri, but is known at Togariishi, Sakai 坂井 in Yamanashi, the Ubayama 姥山 shell mound in Chiba, Nakahara 中原 (not Narahara) in Hachioji City, Tokyo, and occasionally as far away as the prefectures of Akita and Iwate. These are deep jars with large plain surfaces sometimes bearing red paint, and with a neck perforated by an average of ten holes set off by a strip of clay. Several examples have all or partial figures in appliqué (Plate 1*b*). These vessels go by local type names, but all belong to the Katsusaka family or its immediate derivatives, and thus they are early Middle Jōmon.

Yamanouchi passes on the information that Mutō found carbonized seeds of wild grapes in one vessel and decided that such jars were used in the brewing of a kind of *sake*, and Fujimori believes the shape of the neck indicates a lid was to be attached and the vessel should have been used for storing seeds prior to the spring planting (Yamanouchi 1964: 152; Fujimori and Mutō 1962). One jar found as far north as Morioka City by Kusama and Yoshida had a fire-weakened lower body that the excavators interpreted as the part of the jar that was nearest the coals as it was suspended over a fire by cords that passed through the neck holes (Kusama and Yoshida 1960: 7).

Esaka is convinced these vessels were used to store starch that had been removed from the roots of ferns, chestnuts, horse chestnuts, acorns, and other plants and nuts (Yamanouchi

1964: 166). Yamanouchi grants the merits of these ideas, but says the vessels must have been intended as drums that were made for some kind of religious activity (Yamanouchi 1964: 152). Skin would have been stretched over the open end and pegged into the holes. The human figures and "hands" must have been suggested by the poses and movements of the participants in the ceremonies.

In either case, as storage vessel or drum, the use was obviously highly specialized, the ritual derived from the need that was served, and the unique decoration made its contribution to the object's effectiveness. I believe both use and ritual must have been concerned with the acquisition and care of food. If Kusama and Yoshida are correct, the ridge protected the cords from the heat of the fire, but their jar is rather far from the cradle, and the finely painted designs, as on the one from Togariishi (Kidder 1965: Plate III), would probably not have been done with the expectation of subjecting the vessel directly to the fire. The jars are quite large and both have an unusual shape and an unusual decoration. The prominence of the features mentioned above and their prevalence at Idojiri and Togariishi suggest they are closely related to the rapid rise of this mountainous culture, but there is as yet no consensus on the specific role they played in its emergence.

#### SNAKE AND BIRD DECORATION

Middle Jōmon's attention to decoration could hardly have been all aesthetically motivated despite what was patently a new artistic attitude. In prior periods, practical considerations came first; vessels had a functional appearance, the decoration acting as no more than a supplement to its effect. Yet, Middle Jōmon man paid so much attention to decoration that it was done largely to the detriment of form. The heads of animals on the rims of Katsusaka-type vessels are well known. They have a primary distribution in Nagano, Yamanashi, and west Tokyo (Plate IIc), but recently much notice has been taken of what appears to be a Middle Jōmon snake cult (Yamanouchi 1964: 166). The cult's chief exponent, Esaka, points to over a dozen examples of wall decorations, handles, and rim loops that take serpentine forms, are usually notched, and have heads that range from those of relatively recognizable snakes to those that require considerable effort to visualize any serpentine similarity (Plate IIa).

The earliest appearance of the snake in decoration is in the Nashikubo 梨久保 type of Nagano Prefecture (Yamanouchi 1964: Plate 91) according to Noguchi (Noguchi 1965: 120). The Katsusaka ceramic family uses the snake rather often (Plate Ic) and on every type of vessel, but it is unknown in contemporary Atamadai 阿玉台 pottery areas (Chiba and Ibaragi prefectures, for instance) where different customs evidently did not call for it.

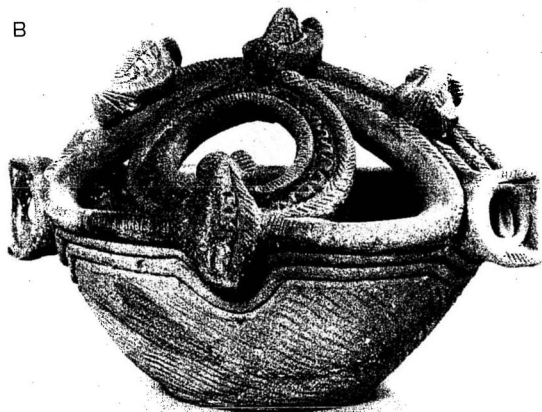
Most of the representations are from Nagano Prefecture, but one which has been claimed to resemble the *mamushi* 蝮, Japan's only poisonous snake, may be seen on a vessel from Miyashita 宮下, Hachiōji City, west of Tokyo (Yamanouchi 1964: 179, note on Plate 100). Should any rebuttal be sought, it is known that the *mamushi* prefers higher altitudes than Tokyo's, and it is not normally found in the Tokyo area today. As for the degree of representation, Katsusaka designs naturally tend to conform to certain conventions, including the primitive characteristics of grotesqueness and rudimentary appearance, and they do not lend themselves easily to precise identification. Pit Dwelling 2 at the Narahara 榎原 site, Hachiōji City, contained four vessels that bore patterns construed to be snakes, and a nearby house contained another.

The suspension bowl from Fujimi-chō 富士見町, Nagano Prefecture (Plate IIb), with

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B



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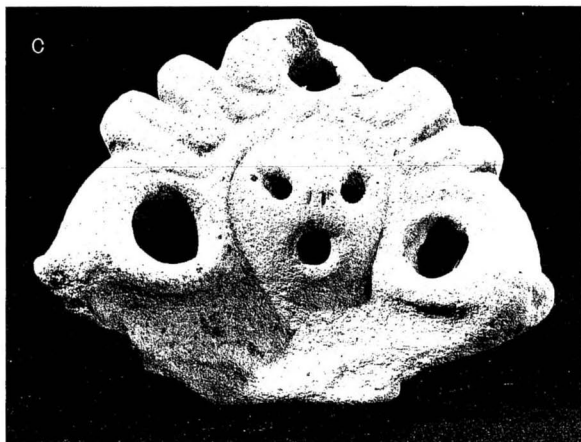


Plate IIa Jar with "snake" decoration, from Tōnai, Fujimi-chō, Nagano Prefecture. Height, 37 cm. (Yamanouchi 1964, Plate 120.)

*b*Handled bowl, from Fudasawa, Fujimi-chō, Nagano Prefecture. Height, 16.6 cm. (Yawata 1963, Plate 23.)

*c* Rim head from Koigakubo, Kokubunji-machi, Kita-tama County, Tokyo. Height, 10.3 cm.





Plate IIIa Broken rim projection in shape of bird's head from Shimohara, Yamagata Village, Higashi-chikuma County, Nagano Prefecture. Maximum width, 8.8 cm.

b Jar with "bird" decoration, from Location 4C, International Christian University, Mitaka City, Tokyo. Height, 25.4 cm.

c Quartzite stone in shape of bird's head, pecked and painted eye, from Location 4C, International Christian University, Mitaka City, Tokyo. Length, 12.7 cm.



late IV *a, b* Clay female figurine from Sakai, Nirazaki City, Yamanashi Prefecture. Height, 16.5 cm.

*c* Clay figurine from Togariishi, Toyohira Ward, Chino City, Nagano Prefecture. Height, 8.9 cm.



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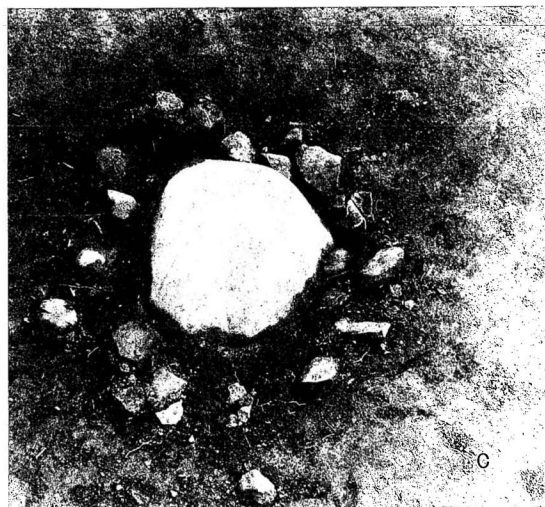
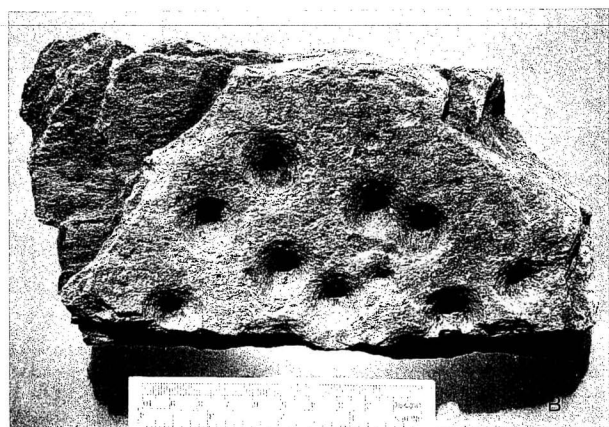


Plate Va Quartzite phallic stone from Location 20, International Christian University, Mitaka City, Tokyo. Length, 11.2 cm.

b Chlorite-schist stone used for making fire, Location 4 Trl, International Christian University, Mitaka City, Tokyo. Length, 21.6 cm.

c Cluster of stones, Location 15, International Christian University, Mitaka City, Tokyo. Widest dimension, 53 cm.

three elliptical figures on one side and one on the other, finds observers divided in their choice of frogs or snakes (Noguchi 1963). To Esaka (Yamanouchi 1964: 166) and me, they resemble slugs. At one point, Esaka carries his argument so far as to say that if the principle were to be followed up, it might be conceivable that all Katsusaka decoration was derived from snake forms (Yamanouchi 1964: 166). He concludes that the economic stability that resulted from primitive agriculture allowed the people to develop this unusually high level of pottery manufacture, and that snakes and frogs came to be associated with the earth and its yield and were venerated as forms of spirit life (Yamanouchi 1964: 167).

Noguchi takes exception to Fujimori's theory that snakes were portrayed on storage vessels in forms of sympathetic magic to utilize the power of the snake and amphibians (Fujimori, ed. 1965: 96); Noguchi believes the idea depends too much upon Middle Jōmon agriculture (Noguchi 1965: 122) and that the decorative snakes and other animals of the Middle Jōmon period are totems and were not necessarily associated with agriculture.

The great majority of rim heads (Plate IIc), with their long pointed noses and slanted eyes, seem more rodent or feline than reptilian. I once suggested that they are rodent, feline, and canine, and that they reflected some simple pattern of totemism (Kidder 1957: 30, 47). Since one rim-head from Sakai (Hosaka), Yamanashi Prefecture (Kidder 1959a: Plate 18) has a pair of "arms," it should therefore be eliminated from the reptilian category and, in the process, take the others with it. In other words, snakes may be a clue to the meaning of much of Katsusaka decoration, but one can avoid delirium tremens by taking a broader view of these motifs.

Not all appear snake-like to me (Plate IIIa), and as the snake motifs moved out of the mountains and were absorbed into other decoration in the more coastal areas, they lost more of their snake-like character, became progressively more bird-like, and at the same time, more abstract (Fig. 3). It may well be that the initial reason for using the motifs was lost sight of as the designs were transplanted and nurtured by other people. Most subhuman "creatures" or motifs in Katsusaka-family pottery decoration are three-fingered. To interpret the fingers as birds' claws is not far-fetched, considering that there was a trend towards bird-like figures as the culture shifted and was absorbed. A composite approach towards zoo-anthropomorphic representations is already apparent in the subhuman features.

A vessel of the "basket" type that is slightly later in time than Katsusaka was found at Location 4C of the I.C.U. site, Mitaka City, Tokyo. It bears a pattern on one side that resembles a vertically placed bird (Plate IIIb). Note the head and wing shapes. The vessel is of the middle stage of the Middle Jōmon period and is rather close to examples found at Daigi in Miyagi Prefecture and elsewhere of approximately the same date (Fig. 3). Incidentally, the crisscrossing of the clay strips and the "corduroy" surface have long been compared with wickerwork and basketry, from which they were probably derived (Sugiyama 1942: 121); one might add the comment that baskets were probably the principal means for carrying nuts on gathering trips. The basket style of pots also moved towards the coast and lost its distinctiveness in the process.

*Kodai Bunka* 15, 5, Plate 4, illustrates an undescribed pottery stand that bears large oval holes and a raised figure on its underside; in the caption it is called a snake (Fig. 4). It is not wholly convincing. In aerial view, the figure could pass for a coiled snake; in profile, it is more like a bird's head. The conventions of Katsusaka art are ambiguous; at this stage most observers would call it a snake, but it may be in the Tokyo area where the transformation begins to take place.

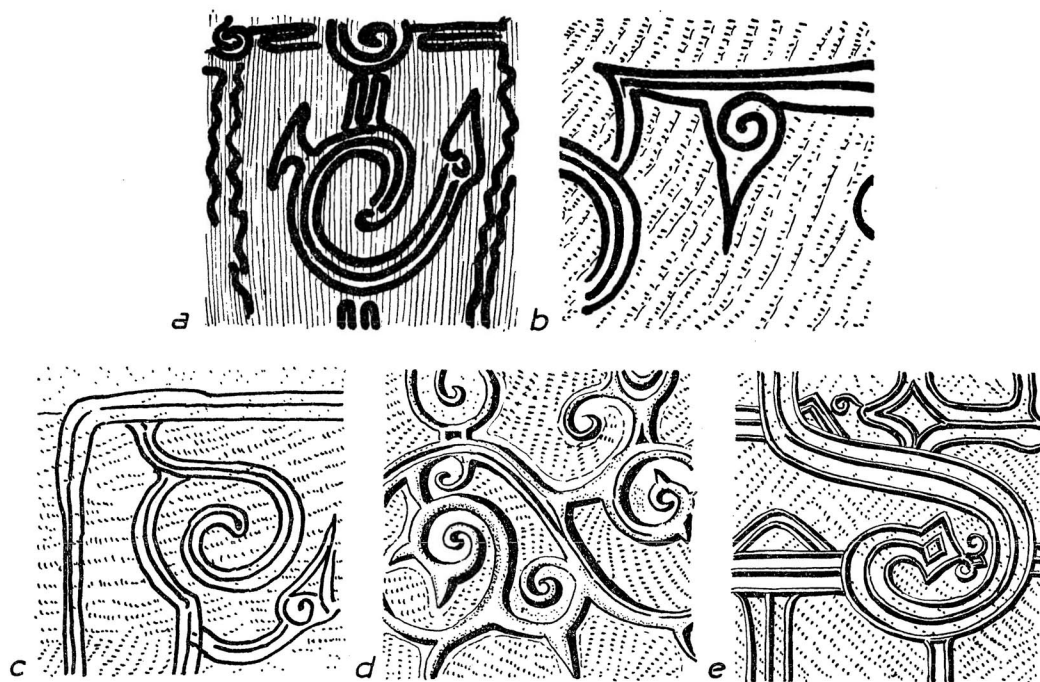


Fig. 3 Bird-like designs on late Middle Jōmon period vessels:

- a.* Kawakishi, Nagano Prefecture;
- b.* Nerima, Toyotama, Tokyo;
- c.* Shichigahama, Miyagi Prefecture;
- d.* Numazu, Miyagi Prefecture;
- e.* Matsusaka, Fukushima Prefecture.

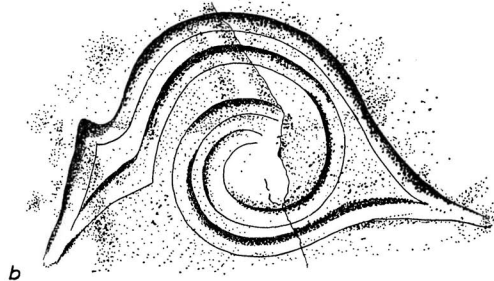
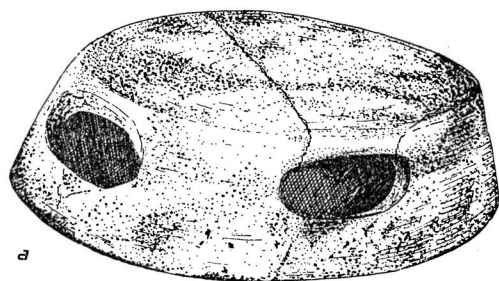


Fig. 4 Pottery stand (*a*) with raised figure on underside (*b*) from Tamagawa-gakuen-mae, Machida City, Tokyo. Diameter of stand, 25.6 cm; width of figure, 14.5 cm. Katsusaka type.

Animal motifs may have been thought of as protective of the vessel's contents. Human forms are rare; subhuman forms are less rare. There is a subsequent minor history of pots with human-head motifs, paralleling the change in the figurines to fully anthropomorphic types in later Jōmon periods and in Yayoi, in the Chūbu, Kantō, and farther north. Those from which the context is known come from locations that are apparently of a ritual nature and are accompanied by other unusual vessels, or are found in peculiar arrangements. The faces of Yayoi examples bear red paint and rough scratching around the eyes and mouth (Kidder 1965: 82) and may be looked upon as ritual effigies that represent modifications of older forms applied to Yayoi period use.

Japan is not unusual in the survival of elaborated myths, traditions, and customs regarding the snake. Many of the traditions are quite local today and some beliefs accept the snake as benign; others do not. It is commonly a water spirit (*suijin* 水神) guarding crops; it may be female and a fertility symbol associated with childbirth. Husbands take the form of snakes, a practice that is recognized in the oldest surviving written literature. Whether it pertains here or not, the snake has *kamui* status to the Ainu, is regarded as aiding in childbirth, and has been connected with ancestor veneration. Munro speaks of Kinashut Kamui, a spirit chief of the snake tribe (Munro 1963: 108-110), who is instrumental in exorcism, a protector against disease, and a guard of the granary from rodents.

When I used the term canine, it was the fox-like features I had in mind (Kidder 1957: 30). The well-known association of the fox with rice in Inari traditions, acting as the messenger of the gods, is claimed to be ancient. The Fushimi Inari Shrine in Kyoto, the headquarters of Inari shrines, reputedly was founded in A.D. 711. One grants an obvious accumulation of later details in these myths, yet the character of this cult may have found more acceptance in a rice-raising culture if some prior regard for the fox had already existed.

#### FIGURINES AND RITUAL STONES

The striking proliferation of figurines in the Middle Jōmon period is well known. Earlier amorphous features were abandoned and specific features were exaggerated. The presence of figurines is often said to be proof neither for nor against the existence of agriculture, yet some reason must lie behind their sudden increase in number and explicit detail. Middle Jōmon figurines are facially animal-like, obese, and have very enlarged posteriors (Plate IV). Such ample posteriors are known to have been associated with early European hunting cultures and to have had some connection with the ritual life of animal hunters; but they are not unknown in the Neolithic Age and can hardly be used as argument against figurine development as a result of basic economic changes. Special deposits of figurines are recorded by Noguchi (Noguchi 1959: 135-136, and in Kono 1964: 124-126); they were found chiefly in stone enclosures. Of 13 deposits, 6 are Middle Jōmon, 6 are Late, and 5 are Latest. All 6 Middle Jōmon deposits are from the region under consideration (Niigata 3, Nagano 2, Yamanashi 1), while the later ones reflect the shifting cultural centers, first to the east, then to the north. At Togariishi, for instance, a clay head was found in a jar (Miyasaka and Yawata 1957: 164, Plate 29).

At Tōnai, whether the association was or was not accidental, a head of a figurine with coiled snake behind it was found lying face down near a round stone. Two pots were close by, one of which carried snake decoration (Plate IIa). All were apparently on the floor of a pit dwelling (Mutō 1963b).

Recent writers on the figurines have pointed out the high incidence of breakage among them, much of it apparently intentional and noted that finds of complete examples in which the field conditions are known have all come up within rings of stone (Tsuboi 1962: 125). All of the figurines at Hiraide were discovered in one round house that had been destroyed by fire (Ōba 1955: 48, Plates 11, 12, 64/1-6; Fig. 17). The implication drawn from the figurines' fragmentary condition is that by breaking them, man destroyed their magical value. Special deposits must have been simulated burials, whether the figurines were whole or not, that, like the placing of an infant's bones in a hollow figurine (Esaka 1960: 131), or the deposit of the clay head in a jar, symbolized a return to the womb, that is, to Mother Earth, in a context that would have meaning only to people who had a constant dependence upon the soil for their livelihood.

Esaka says the figurines are all female (Esaka 1960: 3), although it is apparent that a great many lack all indications of sex marks. Two published examples are claimed to be male; one figure is from Yamanashi Prefecture of Middle Jōmon (Nagamine 1951), the other from Chitose 千歳, Hokkaidō, of the Late Jōmon period (Ōba 1965). There is an additional one from Idojiri that looks male and Fujimori admits that some observers think so (Fujimori, ed. 1965: 131, Fig. 199/14). These figurines in themselves may not be significant, but what is important is that through them, male symbols made their first appearance at this stage (Plate Va). Normally, male symbols materialize when societies become more conscious of the role of the male as he assumes a greater share of the community's responsibilities.

Some stone phalli can be readily distinguished from pestles by their decoration. What the Japanese call *seki-bo* 石棒 stone clubs, range in size from 10 to 100 cm, that is to say, from a size usable for pulverizing foods to a size that could only be symbolic. Shaped mortars of pumice (Fig. 5a), sometimes with lip and four short legs, appear along with the older style flat stones used as grinding surfaces. Most sites yield a number of these mortars and similarly shaped abrasive stones that have conical depressions made when fire was friction-produced with a wooden drill.

There are 48 of these pitted stones from one pit house at Ōhata 大畑, an Idojiri sub-site. They are believed by Fujimori to be fire-making stones, but by Mutō to be "nutting" stones (Fujimori et al. 1965: 32). Kaneka speaks of rough and smooth holes and reports such pitted stones in abundance in Niigata Prefecture. He claims that a small pebble placed in a smooth hole can be struck by a rough stone to make an arrowhead with considerable ease (Fujimori et al. 1965: 32). While this technique may have been used, it seems unlikely to me that a stone of ten or more holes was designed for the mass-production of arrowheads.

Several such stones of chlorite schist have been found in I.C.U. excavations (Plate Vb). The raw material was brought from Hagure, Nagatoro, in the upper Ara River valley, a considerable distance from the Tokyo sites where it appears. One imagines that such stones would have been of little more use in cracking nuts than would a good pair of teeth. Fujimori speaks of his stones as hand-size, usually with two holes to a side, and almost always made of granite or a hard sandstone. He estimates that only one out of 150 is of slate (Fujimori et al. 1965: 32). He is therefore thinking of the stone as being held in the hand with the pits turned down. One of the pits acts as a socket for a vertically rotated stick, and the fire is thus produced against a piece of wood on the ground. He reasons that many were kept outdoors for convenience, since fires were often made to have wood ash available for fertilizer. On the other hand, there is good reason to believe that a fire was kept constantly burning inside the house (Fujimori et al. 1965: 33).





Plate VIa Mushroom-shaped hornblende andesite stone, Location 15, International Christian University, Mitaka City, Tokyo. Maximum diameter, 22 cm.

*b* Pottery stand, Location 1F, International Christian University, Mitaka City, Tokyo. Diameter at base, 17.4 cm.

*c* Stone tools, Location 1B, International Christian University, Mitaka City, Tokyo. Right and middle: Greywacke standstone; left; standstone with shale fragments. Length of middle tool, 11.85 cm.



Unusual arrangements of stones are known from Middle Jōmon sites. Small stones clustered around a large stone at Narahara were considered to be a grinding table (Gotō 1933: Plate 14). The grouping of stones at Location 14 of the I.C.U. site most likely marked a burial (Plate Vc). There was no evidence of house floors in the vicinity. Nearby was a large, horn-blende andesite, mushroom-shaped stone (Plate VIa), in broken condition, that apparently once stood as the center of a pile of stones. Its total height is estimated to have been 60 cm, and the heel is tapered. It is smoke blackened in spots and bears evenly spaced conical holes on its unbroken side. The material is not considered to be native to the Musashino region. Piles of stones have been found in several spots of the I.C.U. site, and two-thirds of a circle of fist-size stones on the Middle Jōmon level measuring 120 cm across its widest dimension was exposed at Location 4 in 1963. Charcoal recovered at Location 21 from under a pile of pebbles that was associated with Atamadai and Katsusaka pottery gave a radiocarbon date of  $3140 \pm 65$  B.C. (Long 1965: 253—incorrectly edited as overlain with 85 cm of gravel, the pile of stones was actually covered by approximately 55 cm of humus); Location 4Q, 400 m to the north, on a bluff 20 m higher, appeared to be slightly more recent material and gave the date of  $2620 \pm 150$  B.C. (Fergusson and Libby 1964: 337, UCLA-279, which omits mention of the I.C.U. site). Other Middle Jōmon dates are the Ubayama shell mound, Chiba,  $2563 \pm 300$  B.C. (Groot and Sinoto 1952: 5), and Ōmiyama, Nagano,  $2630 \pm 60$  B.C. (Long 1965: 253).

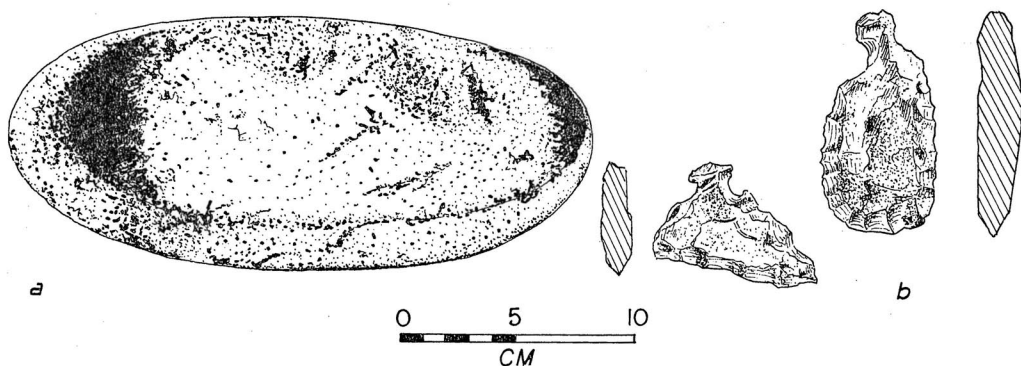


Fig. 5 Pumice stone mortar (a) from Inaridaira, Kami-suwa, Suwa City, Nagano Prefecture. Length, 23.5 cm. Middle Jōmon period. Stone "spoons" (b) from Fukuura, Yusa-machi, Yamagata Prefecture. Length of right tool, 7.7 cm. Early Jōmon period.

#### POTTERY STANDS AND SUSPENSION VESSELS

The so-called pottery stands make up a class of objects for which there have been surprisingly few explanations (Figs. 4a, 6a; Plate VIb). Seven stands found at Narahara, west Tokyo, are described as having thick walls, being well polished, and bearing round or oval-shaped holes. Their use is said to be unknown, and the excavators admitted to not knowing which side was up (Gotō 1933: 31). The holes frequently are in pairs, and Yawata looks on the perforated pottery stands as types of primitive wheels (Yawata 1963: 14). He illustrates two from Sakai, Yamanashi Prefecture, one with holes, the other without (Yawata 1963: Fig. 26); the latter is said to be a stand to hold pottery. Two were found at Hiraide, Nagano Prefecture (Ōba 1955: Plates 62/107, 108); each is about 18.5 cm in diameter. One stand has two pairs of

holes and is called Kasori 加曾利 E type (late Middle Jōmon) because of its decoration. It came from a trench, not necessarily a house floor. The other stand has no holes, is called Katsusaka type because of its association with known Katsusaka objects, and was found in the pit of a house, evidently in the northwest corner. An examination of these stands has not revealed any rings, scratches, or scrape marks that might have resulted from revolving; the stands themselves would have had to rotate on a kind of support if they were "wheels." The one from the I.C.U. site (see Plate VIb) has a smoke-blackened interior, and one sherd that apparently comes from another stand, to judge by the shape of a partial hole in it, bears red paint.

Pottery stands seem more likely to have been stands for jars of special foods, or used as kinds of tables for holding cult objects or offerings. In examining them, one may call to mind the small wooden or lacquer Shinto stands known as *sanbō* 三宝 used for offerings to deities or nobles that bear four, three, or no holes, depending upon the rank of the person using them (Fig. 6b); in theory at least, unranked people do not use them. Harada sees the development in *sanbō* from the Fukui 福井 type burial jars of Kyūshū through perforated Yayoi stands of the Kinki to cylindrical *haniwa* with holes, also of the Kinki (Harada 1954: 249, Fig. 47) and tosses in the idea for good measure that the cylindrical *haniwa* should have been substitutes for human sacrifices. Like the contemporary *sanbō*, which have consistency only when recognized within the framework of the ritual, some pottery stands have an overhanging edge but no holes. Others have holes without the overhanging edge. Still others have neither, but in the case of the former two, both the pairs of holes or the overhanging edge serve excellently as lifting devices.

Whale vertebrae in the Kyūshū region have been called the prototypes of such stands by Mishima (Mishima 1961). These are found in Ataka assemblages and are therefore of the Middle Jōmon period. Ataka pottery is fairly widespread throughout the island of Kyūshū, but it is densest on the coast of the Ariake Sea. Whale vertebrae have been recovered from five Ataka sites and Mishima believes markings on them show they may have served as stands during the making of pottery or for drying purposes.

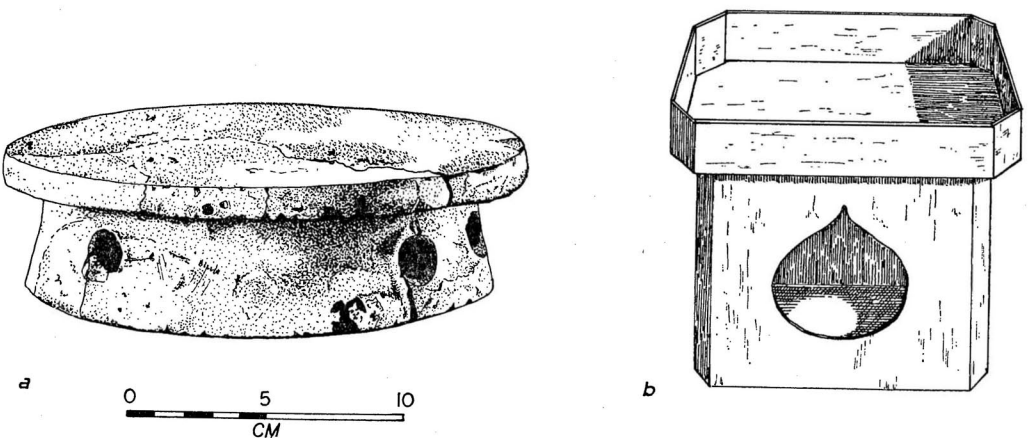


Fig. 6 Pottery stand (a) from Idojiri, Fujimi-chō, Nagano Prefecture. Diameter, 19.2 cm. Early Middle Jōmon period. Wood *sanbō* (b) used for Shinto offerings.

Suspension vessels (Plate II*b*), that is, round bowls with two, three, or four arched handles, had their development in the Chūbu region. The fact that they were so often found apart from other pottery had long baffled archaeologists. They have been popularly referred to as incense burners. One such vessel was discovered in Pit Dwelling 3 at Idojiri (Fujimori, ed. 1965: Plate 103) and had the remnants of a black wick near the juncture of body and handle and a soot-covered interior. This find led Fujimori to say that all other theories regarding these vessels were now obsolete: the vessels were used as lamps and must have fallen from a post or beam after the house had been abandoned (Yamanouchi 1964: 181, note for Plate 134).

### MIDDLE JŌMON STONE ARROWHEADS AND "SPOONS"

The widely used stone implement was a hand-size pebble chipped only as much as necessary to make it serviceable (Plate VI*c*). Most still retain a fairly large nature-smoothed surface on one side. These outnumber by more than twenty to one the arrowheads found in a large Middle Jōmon village site. Ueno measured the relative size of arrowheads in east Japan and reached the conclusion that Middle Jōmon examples in the Chūbu were generally shorter than in north and east Japan and that arrowheads in the same region did not change in size after Middle Jōmon (Ueno 1963). I would like to interpret this to mean that there was no need in the Chūbu to modify this particular kind of point. Fujimori has noted that there are proportionally more arrowheads in small Middle Jōmon sites (Fujimori 1950: 41-42), a situation that implies a greater dependence of the inhabitants of such sites on hunting than on more stable methods of subsistence.

In his study of the stone "spoons" (*ishisaji* 石匙), a vertical or horizontal tanged tool (Fig. 5*b*) said to be designed for carrying, Fujimori points out that such a tool is small in size and of generally hard stone from its first appearance around the middle stages of Earliest Jōmon until Middle Jōmon, at which time, with both types in use, they are larger and rougher and of coarser material (Fujimori 1963). In his opinion, the Early Jōmon "spoons" were probably used as knives for skinning and cutting up the meat of animals, whereas in the Middle Jōmon period, they must have been employed as reapers, for digging vegetables, and for peeling fruit.

### THE RITUAL NATURE OF THE VILLAGE

To the younger Miyasaka, the Middle Jōmon culture at the foot of Mount Yatsu may be divided into three successive stages: Early Katsusaka, Late Katsusaka, and Kasori E, known locally as Tōnai, Idojiri, and Sori 曾利, respectively (M. Miyasaka 1965: 346). (Kasori E is often referred to as Ubayama in Western books).

Early Katsusaka had figurines which, to judge by the holes in their torsos or necks, must have been hung in the house (see Kidder 1965: 27 for suggestions that these holes were intended for structural purposes) and rather large phallic stones which stood at certain spots in the village. Late Katsusaka has no figurines in pit dwellings; rim heads are rather many in number and are found by themselves. Kasori E is a stage without figurines (they has spread to the Suwa region by this time) and without rim heads; there are standing stones, stone altars, and phallic stones. In Early and Late Katsusaka, the painted vessels with perforations around the rim served for storage purposes. They became smaller towards the close of this stage and generally disappeared in Kasori E to be replaced by storage vessels buried in the ground. Miyasaka

believes this radical change of storage method points to a great difference in the type of food for which preservation was needed.

The Togariishi site is actually composed of several sub-sites or branch villages. From these have come a rather extensive group of pestles, stone phalli, mushroom shaped stones, stone "pillars" of roughly square section, natural stones of suggestive shapes and flat tablet-like stones which stood on "altars" in the pit dwellings. These altars were formed like stone platforms and held the phalli, pillars, figurines, and sherds. The arrangement of the community at Yosukeone 与助尾根 (Fig. 7) is clearer than at Togariishi proper where pits overlap each other in great confusion. There were 28 houses situated on the south side of the plateau. Some pits include fireplaces lined with stones; in others, the stones had been removed. Generally speaking, the houses with fireplace stones were built partially over existing pits, and it is quite evident that stones were taken out of fireplaces for use in later houses. This useful fact has furnished the clue to the time sequence of the settlement's development and the number of houses in contemporary use. When the site was abandoned, 15 dwellings with fireplaces intact constituted the village (Tsuboi 1962: 118-119).

In the view of the excavator, the 28 pits appeared to be clustered in 6 groups. Each group contained both earlier and later pits, and it was noticed that three sets of symbols seem to have been present: a standing stone, a figurine, or the suspected presence thereof, and phalli. One house had a standing stone; this same house and another had stone platforms; one had a figurine in a pot and another, a circle of stones from which a figurine may have been removed; two houses had phalli. Assuming, therefore, that removal took place from one house to another and the family jewels went along, and that these three features represent a pattern and not an accident, the 6 clusters of houses fall into two general groups, one of which lies to the east, the other to the west. It looks as though not only the fireplace stones were removed from House 17, but a hole suggests that the standing stone was also transferred and that House 7 next door was the recipient of both. House 7's fireplace is closer to the side than usual, and the location of the entrance can be presumed from the scheme of the postholes. This led the excavator Mizuno to feel that basic rules controlled the arrangement of a house. It faced more or less south; the altar for the standing stone was at the back on the left, and buried pots, phalli, or stone circles were placed either to the right or the left, but near the entrance. He then assumed that if a house had been occupied by a family, each member had a recognized place. Two paths probably led off from these clusters of houses to converge and continue towards the springs in the valley.

Several other possibilities came in for speculation. For instance, there may have been two family groups, but the division into three subgroups makes this look rather unlikely. Or, in each case there may have been one house for men (phalli), another for women (figurine), and a third for one or more persons endowed with leadership (standing stones). He makes a further suggestion (for which the argument is not clear to me) of a kind of matriarchal system, the male chief residing in the house with the standing stone while others lived in the immediate vicinity. An estimate of the population at Yosukeone at any one time would range between 40 and 50 on the basis of 4 or 5 men to a house, or it may have been composed of two families of 20 to 30 people a piece.

Neither Mizuno nor Tsuboi suggest a kind of "ritual removal." That is, a shift probably prompted by a calamity of major proportions and done with the intention of regaining the community's luck. This would seem to me to be a reasonable possibility and is certainly in keeping with later Japanese practices that were recorded in the building of new palaces on

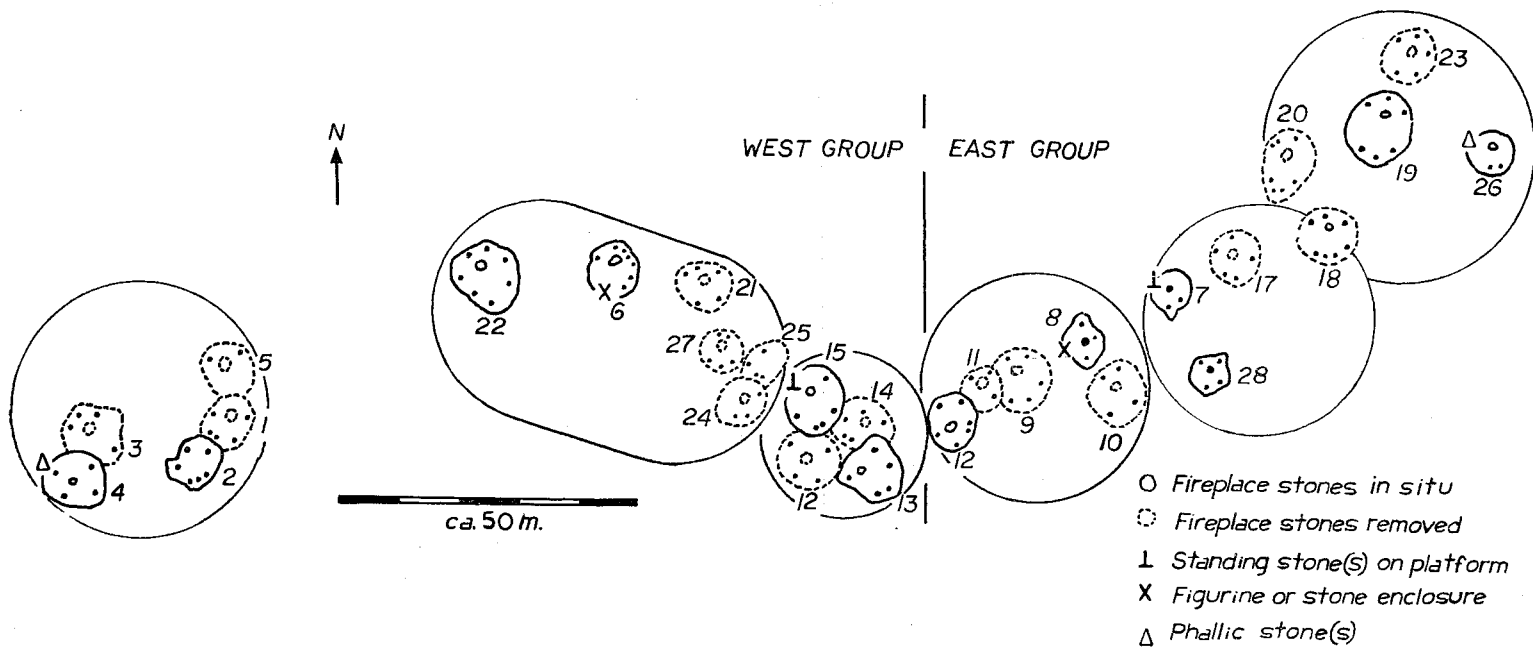


Fig. 7 Pit dwellings at Yosukeone, Togariishi, Toyohira Ward, Chino City, Nagano Prefecture (redrawn from Tsuboi 1962: 119).

the death of the ruler and was presumed to be the case otherwise where social affluence permitted it.

Groups of pits tend to curve around like a horseshoe or form a rough ring. This scheme has already been noted for the shell mounds in the Tokyo Bay region (Serizawa 1960: 136) and raises questions about the village's defense methods or social ranking or both. Some shell mounds evolved from the practice of each house accumulating its own refuse, and some are actually a collection of smaller mounds. Tsuboi feels that where there is good "hinterland" for a shell mound, its large size warrants the belief that the people indulged in forms of plant cultivation (Tsuboi 1962: 126). Of the pit dwellings known to have existed at the west end of the I.C.U. campus, only one had been furnished with a stone floor (Kidder 1959b: 84-85). Its uniqueness seems to justify the idea that it was the house of the group's chief and is therefore an indicator of social distinctions of the time.

#### SUMMARY

Speculation on the eclipse of this Chubū Middle Jōmon culture may have some bearing on the possible continuity in agricultural practices. Tsuboi considers such a culture as being fragile and relatively unable to withstand several bad seasons or fundamental changes in the environment. The hardiest people may have survived into a later period, but annihilation was the lot of most (Tsuboi 1962: 127). Expansion of coastal Late Jōmon sites and the appearance of "mountain" features in the east, by the latter half of the Middle Jōmon period, for instance, "basket" style vessels, stone phalli, figurines in quantity, pottery stands, and many details of pottery decoration, make it seem likely to me that these people were moving out of the highlands towards the lower plains, introducing their cultural paraphernalia to the seafood gatherers along the east coast. Trade in obsidian may have initially brought them into contact with the inhabitants of the western flank of the Kantō plain. The coastal people themselves may have acquired most of their obsidian by expeditions to or trade with residents of the Hakone Pass area (Groot and Sinoto 1952: 29), but Nagano's obsidian filtered down into the western part of the plain. While I believe the lowlands and coastal population was increased in this manner, I would not disagree with Tsuboi's supposition that the shell mound makers could hardly have caused a population explosion by simply catching more fish. He considers it likely that some vegetable farming supplemented the people's diet and created a more sedentary life for coastal dwellers (Tsuboi 1962: 127). The regional variations are frankly wider in the Middle Jōmon period than at any other time. This in itself is reason for investigation into the circumstances which caused the variations. It could hardly be coincidental that the regions where the high level of culture was reached in the Middle Jōmon period are also the modern regions where vegetable cultivation is superior to rice cultivation (Tsuboi 1962: 125).

#### ADDENDUM

Esaka Teruya has a note and illustrations in *The Archaeologi-Journal*, 1968, 24, back of frontispiece, regarding the discovery of bread at the Mineichigō site, Gero-chō, Masuda County, Gifu Prefecture. This is an Early Jōmon village site in which Moroiso a and b types of pottery were found. Some Katsusaka sherds also were recovered from one spot.

There is one cake about 7 cm long and five small pieces, quite similar in appearance to the

bread from Sori Pit 5. These came out of a house pit which yielded Yonmaibata (Moroiso b) type pottery.

Esaka's comments include the fact that the site is geographically closer to the Kansai, but its relics are typologically closer to the Kantō. A large number of stone spoons (*ishisaji*) and arrowheads were found, leading him to suggest that they were probably manufactured there.

The results of this discovery may have to be looked at in a larger context, but two things are certain: Moroiso b pottery is normally considered to be earlier than Katsusaka pottery, and the Mineichigō site is about 70 km west of the outer edge of the area dealt with in this article.

## REFERENCES

- BUNKAZAI HOGO IINKAI [Commission for the protection of cultural properties]  
 1953 *Ōyu-machi kanjō resseki* [Stone circle remains of Ōyu-machi]. Tokyo.
- ESAKA, TERUYA  
 1959 Jōmon bunka no jidai ni okeru shokubutsu saibai kigen no mondai ni kansuru ichikōsatsu [On the problems of the origin of vegetable cultivation in the Jōmon period culture]. *KZ* 44, 3:10-16.  
 1960 *Dogu* [Clay figurines]. Tokyo.
- FERGUSON, G. J., and W. F. LIBBY  
 1964 U.C.L.A. Radiocarbon Dates III. In *Radiocarbon* 6:318-339.
- FUJIMORI, EIICHI  
 1950 Nihon genshi rikukō no shomondai [Various problems of primitive cultivation in Japan]. *Rekishi Hyōron* 4, 4:41-46.  
 1963 Jōmon Chūki ni okeru ishisaji no kinotaki henka ni tsuite [Change in shape and use of stone spoons in the Middle Jōmon period]. *KZ* 49, 3:35-43.  
 1965 *Idojiri iseki* [Remains of Idojiri]. Tokyo.
- FUJIMORI, EIICHI, ed.  
 1965 *Idojiri*. Tokyo.
- FUJIMORI, EIICHI, and YUROKU MUTŌ  
 1962 Chūki Jōmon doki no chozokeitai ni tsuite [On the conditions of preservation (in the use) of Middle Jōmon pottery]. *Kōkogaku Techō* 20:1-6.
- FUJIMORI, EIICHI, YUROKU MUTŌ, MITSUNORI TOZAWA, TAKESHI KIRIHARA, SHOICHI HIGUCHI, MITSUAKI MIYASAKA, and ISAMU OKAMOTO  
 1965 Chūki Jōmon bunka no sho mondai [Various problems of the Middle Jōmon culture]. *Nagano-ken kōkogakukaishi* 3:17-37.
- GOTŌ, SHUICHI  
 1933 *Tokyo-fu shiseki hozonbutsu chōsa hōkoku* [Report of the investigation of historic remains of Tokyo-fu] 10, Tokyo.
- GROOT, G. J.  
 1951 *The prehistory of Japan*. New York.
- GROOT, G. J., and YOSHIHIKO SINOTŌ  
 1952 *The shell mound of Ubayama*. Itikawa.
- HARADA, DAIROKU  
 1954 *Nihon kofun bunka* [The tumulus culture of Japan]. Tokyo.
- ISHIDA, EIICHIRO, MASAO OKA, NAMIO EGAMI, and ICHIRO YAWATA  
 1958 *Nihon minzoku no kigen* [Origins of the Japanese people]. Tokyo.
- ISHIWATA, SOIJI, and RYŌSAKU FUJITA  
 1961 *Tochikura*. Tokyo.
- KIDA, TEIKICHI, and SUEO SUGIYAMA  
 1932 *Nihon Sekki jidai shokubutsu seiibutsu zuroku* [Plates of vegetal remains of the Japanese Stone Age]. Tokyo.
- KIDDER, J. E., JR.  
 1957 *The Jomon pottery of Japan*. Ascona.  
 1959a *Japan before Buddhism*. London and New York.

- 1959b Pre-pottery and Jōmon pottery relationships on the International Christian University campus, Tokyo. In *Artibus Asiae* 22, 1/2:79-94.
- 1965 *The birth of Japanese art*. New York.
- KIMURA, SEIJI  
1963 *Genshi no nōkōbunka* [Agrarian culture in the primitive period]. Tokyo.
- KOBAYASHI, YUKIO  
1965 *Nihon kōkogaku gaisetsu* [Introduction to Japanese archaeology], 13th ed. Tokyo.
- KONO, ISAMU, ed.  
1964 *Nihon genshi bijutsu* [Primitive arts of Japan] II: Dogū sōshingu [Clay figurines and body ornaments]. Tokyo.
- KUSAMA, SHUNICHI, and YOSHIAKI YOSHIDA  
1960 *Iwate-ken Morioka-shi Hataino iseki chōsa hōkoku* [Report of investigation on the site of Hataino, Morioka City, Iwate Prefecture]. Morioka.
- LONG, A.  
1965 Smithsonian Institution Radiocarbon Measurements II. In *Radiocarbon* 7:245-256.
- MISHIMA, ITARU  
1961 Kujira no sekitsuikotsu o riyō seru dokiseisakudai ni tsuite [On whale vertebrae used as potter's stands]. *Kodai-gaku* 10, 1:66-73.
- MIYASAKA, MITSUAKI  
1965 Jōmon Chūki ni okeru shūkyōteki ibutsu no sui [The changes in religious objects in the Middle Jōmon period]. *Shinano* 17, 5:338-348.
- MIYASAKA, EIICHI, and ICHIRO YAWATA  
1957 *Togariishi*, Kayano City.
- MUNRO, N.G.  
1963 *Ainu creed and cult*. New York.
- MUTŌ, YUROKU  
1963a Katsusaka-doki ni hyōgen sareta jintai sōshoku [Human figure decoration formed on a Katsusaka-type vessel]. *Kōkogaku Zasshi* 48, 4:68.  
1963b Jashin sōshoku no tsuita dogū to doki [Clay figurine and vessel with snake ornamentation]. *KZ* 49, 3:64-68.
- NAGAMINE, KŌICHI  
1951 Dansei dogū no shinrei [New example of male clay figurine]. *Jōdaibunka* 21:38.
- NAKAMURA, KOZABURO, and MITSUHARA TERAMURA  
1956 Jōmon bunka ni okeru koshiki-yō doki [Vessels in the shape of steamers in the Jōmon culture]. *KZ* 42, 1:50-61.
- NOGUCHI, YOSHIMARO  
1959 *Nihon no dogū* [Clay figurines of Japan]. Tokyo.  
1963 Hebi o sōshoku shita tsurite-doki [A bridge-handle-shaped vessel with snake ornamentation], *Museum* 142:24-25.  
1965 Jōmon bunka no jashin sōshoku [Snake ornamentation of the Jōmon culture]. *Kodai Bunka* 15, 5:120-122.
- ŌBA, IWAŌ, ed.  
1955 *Hiraide*. Tokyo.
- ŌBA, TOSHIO  
1965 Dansei dogū ni tsuite [On a male clay figurine]. *KZ* 50, 4:62-66.
- ŌYAMA, KASHIWA  
1927 Kanagawa-ken Shimo-araiso-mura aza Katsusaka ibutsu hōganchi chōsa hōkoku [Excavation report on the Katsusaka site, Araiso village, Kanagawa Prefecture], *Shizengaku Kenkyū Shōho* [Short reports of prehistoric studies] 1. Tokyo.
- SAITŌ, TADASHI  
1961 *Nihon zenshi* [Complete history of Japan], 5th ed. Tokyo.
- SAKAZUME, NAKAO  
1957 Nihon genshi nōgyō shiron [Tentative theory on primitive agriculture in Japan]. *KZ* 42, 2:1-12.  
1961 *Nihon Jōmon Sekki jidai shokuryō sōsetsu* [Complete description of food in neolithic Jōmon Japan]. Kyoto.
- SERIZAWA, CHŌSUKE  
1960 *Sekki jidai no Nihon* [The Stone Age of Japan]. Tokyo.



SHIOMI, HIROSHI, and YOSHIO KONDŌ

- 1956 Okayama-ken Sanyō-chō Minami-gata Maeike iseki [The remains of Minami-gata Maeike, Sanyō-chō, Okayama Prefecture]. *Watakushtachi Kōkogaku*, 7:2-7.

SUGIYAMA, SUEO

- 1942 *Nihon genshi seni kōgenshi* [History of primitive Japanese textile handicrafts], 2 vols. Tokyo.

SUMIDA, SHŌICHI

- 1956 *Nihon nōgyō no hassei no mondai* [Problems in the origins of Japanese agriculture]. *Nagoya Daigaku Bungakubu Kenkyū Ronshū* 11:87-107.

- 1964 *Nohi sanchi ni bunpu suru ishizara no kinō ni tsuite* [On the function of stone querns from the Mino-Hida mountains area]. *Nagoya Daigaku Bungakubu Kenkyū Ronshū* 32:33-52.

TOKYO TENMONDAI [Tokyo astronomical observatory]

- 1965 *Rikannenpyō* [Scientific Annual Record] 38, for 1964. Tokyo.

TSUBOI, KIYOTARI

- 1962 *Nihon Rekishi* [Japanese History] 1, Tokyo: Iwanami Kōza.

UENO, YOSHIYA

- 1963 *Higashi-Nippon bunka sekizoku no ōkisa ni tsuite no hikaku kenkyū* [A comparative study of sizes of stone arrowheads in the east Japanese culture]. *Kōkogaku Zasshi* 49, 2:33-46.

WATANABE, MAKOTO

- 1965 *Jōmon Chūki nōkō-ron kankei shuyō bunken-mokuroku* [Bibliography of Middle Jōmon period agriculture]. *Kodai Bunka* 15, 5:141-143.

YAMANOUCHI, SUGAO, ed.

- 1964 *Nihon genshi bijutsu* [Primitive arts of Japan] I: Jōmon-shiki doki [Jōmon style pottery]. Tokyo.

YAWATA, ICHIRŌ

- 1963 *Jōmon doki dogū* [Jōmon pottery and clay figurines]. *Doki zenshi* [Complete history of pottery] 29. Tokyo.